USDA Foreign Agricultural Service

Iraq: Crop Progress Report

MY 2009/10

April – Season Summary Report **May 2, 2009**

1. The outlook for MY 2009/10 winter grain production (wheat and barley) in Iraq is only marginally better than last year's severely drought-affected crop. Less than adequate rainfall and/or irrigation supply during the current winter season has resulted in similarly poor or worse vegetative crop conditions than last year over large regional areas, particularly in the northern rainfed provinces of Ninawa, At Ta'min and Arbil, in addition to the southern irrigated provinces of Diyala, and portions of Wasit and Al Qadisiyah. It appears that total irrigated grain area will decline in MY2009/10 and that poor yields relative to last year in some of the highest yielding irrigated crop areas will prevent a recovery in national winter grain production. Though winter grain production prospects are improved in some northern rainfed growing provinces this year, major producers such as Ninawa, Arbil, and At Ta'min show little change from last year. It is anticipated that the production shortfalls in the south will be greater in size than the increases expected from areas that have exhibited improvement in the north. Generally poor current crop conditions are expected to result in well below-normal national grain production for the second consecutive year.

2. Cumulative precipitation for MY 2009/10 was slightly higher than the severe MY 2008/09 drought year (Figure 1), but remained well below normal throughout most of the country (Figure 2). The majority of rainfed cropland areas in northern Iraq experienced well below normal precipitation throughout the season, with long periods of dryness between significant rain events. Farmers in Ninawa reportedly delayed planting waiting for early season precipitation that never arrived. The current month of April provided improved rainfall, but all too late as harvest typically commences in early April.

3. Regional NDVI (Normalized Difference Vegetation Index) change analysis revealed that MY 2009/10 vegetative crop conditions of Iraq's major grain producing regions remained similar to worse than the severely drought affected MY 2008/09 crop season (Figure 3). The worsening conditions were particularly unexpected in the primarily irrigated southern provinces where grain production is usually much more stable. But reports from Iraq indicated that there was a significant irrigation supply shortfall this year along the Tigris River, owing to substantially reduced water flow from Turkey. NDVI change analysis indicated large areas of normally irrigated cropland in Diyala, and portions of Wasit and Al Qadisiyah with much reduced vegetative growth from last year, including the 5-year average (Figure 4); this is indicative of diminished production prospects. The northwestern portions of Wasit and Al Qadisiyah showed areas of significant green-up in comparison to the previous year and the 5-year average, but the field areas were not large enough to offset the prospected deficit. Furthermore, temporal comparisons of NDVI time-series images indicated that there is much less crop vigor and abundance than the previous benchmark year of MY 2006/07, when Iraq produced a normal sized wheat crop of 2.5 million tons (Figure 5).

4. AWiFS IRS-P6 satellite began collecting imagery during MY 2008/09 to create a baseline of moderate resolution data capable of discerning provincial and field level crop conditions in Iraq. Acquisitions continued into MY 2009/10 and were used as the basis of the following analysis

Northern Iraq (Figure 6)

Northern Iraq is composed of predominantly rainfed cropland that produces the bulk of the country's winter grain, approximately 42% of total wheat and 62% of total barley, in which Ninawa alone contributes 20% of total wheat and 32% of total barley. Due to the northern governorate's dependency on adequate rainfall, the production of grains will be drastically affected by the amount and timing of seasonal rainfall. Seasonal cumulative precipitation remained below normal throughout northern Iraq, with some higher elevation provinces such as Dahuk being relieved from high rates of evapotranspiration. Ninawa received most of its rainfall this year in the northern portions of the province, however, the bulk of the agricultural land which lies in the central region of the province experienced near entire crop failure similar to the previous year (Figures 7 – 11). Arbil experienced the same crop losses in most of the larger rainfed field areas, while the most heavily irrigated northern province of At Ta'min experienced conditions similar to worse than last year (Figure 12 – 14). Sulaymaniyah was the only northern province to receive near normal rainfall throughout the MY 2009/10 season, and vegetative index analysis indicated that crop conditions are near or slightly above normal (Figure 15).

Southern Iraq

Southern Iraq depends almost entirely on irrigation for crop production and produces the remaining 58% of total wheat and 38% of total barley production. In addition to irrigation supply shortages and delivery problems, other detrimental factors such as soil salinity have greatly reduced the agricultural potential of southern Iraq. Although some provinces such as Salah ad Din and Al Qadisiyah have experienced some improvement over the previous year, average crop yields in these provinces are expected to be below average this season (Figures 16 – 17). Major southern grain producers such as Diyala and Wasit have experienced losses in both crop area and yields comparable to the previous drought year, thus contributing to the overall reduction in Iraq's winter grain production in MY 2009/10 (Figures 18 – 20).

Given the overwhelming agro-meteorological and multiple resolution satellite imagery evidence, winter grain production for MY 2009/10 is forecast to be only slightly higher than last year's severely drought devastated crop.

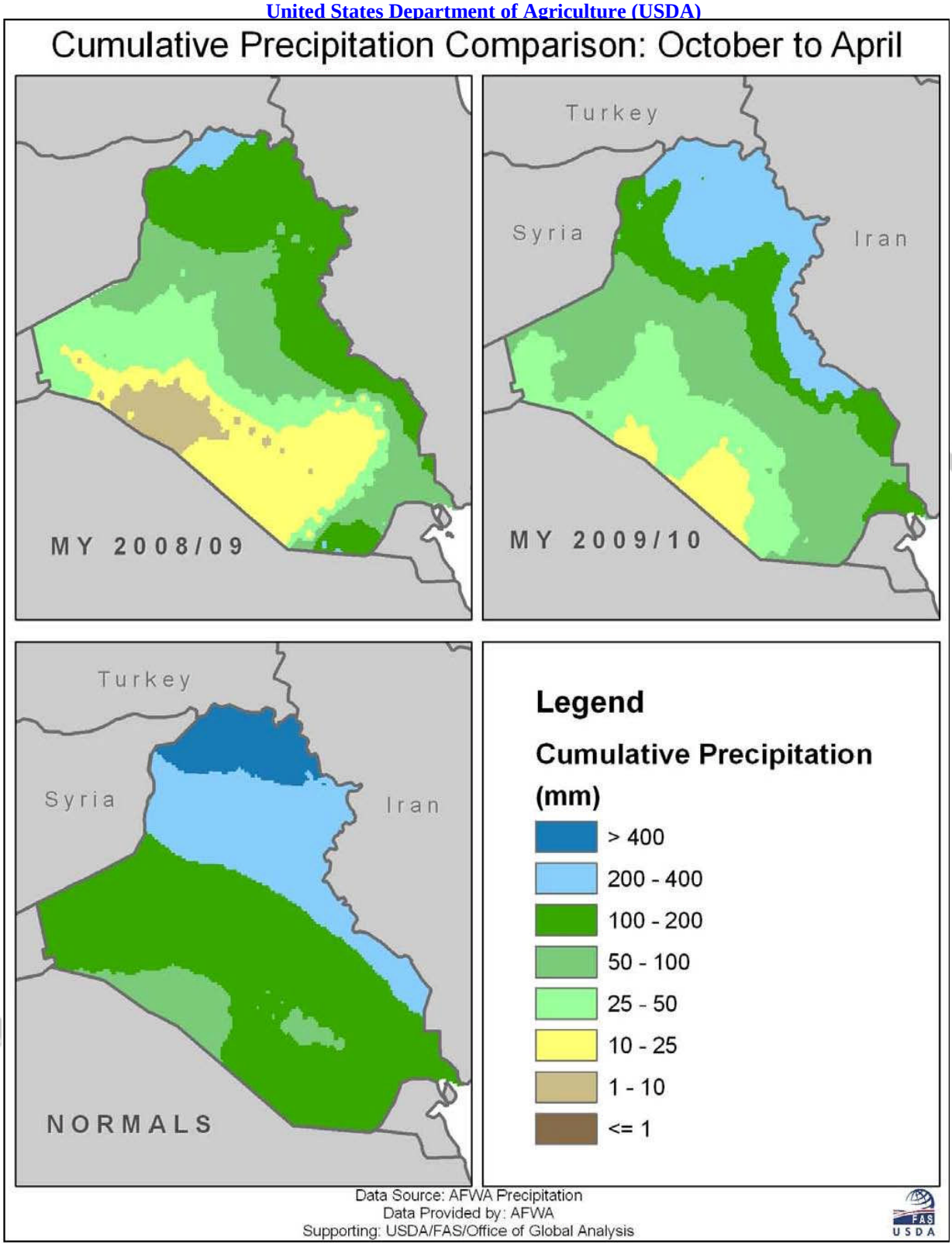
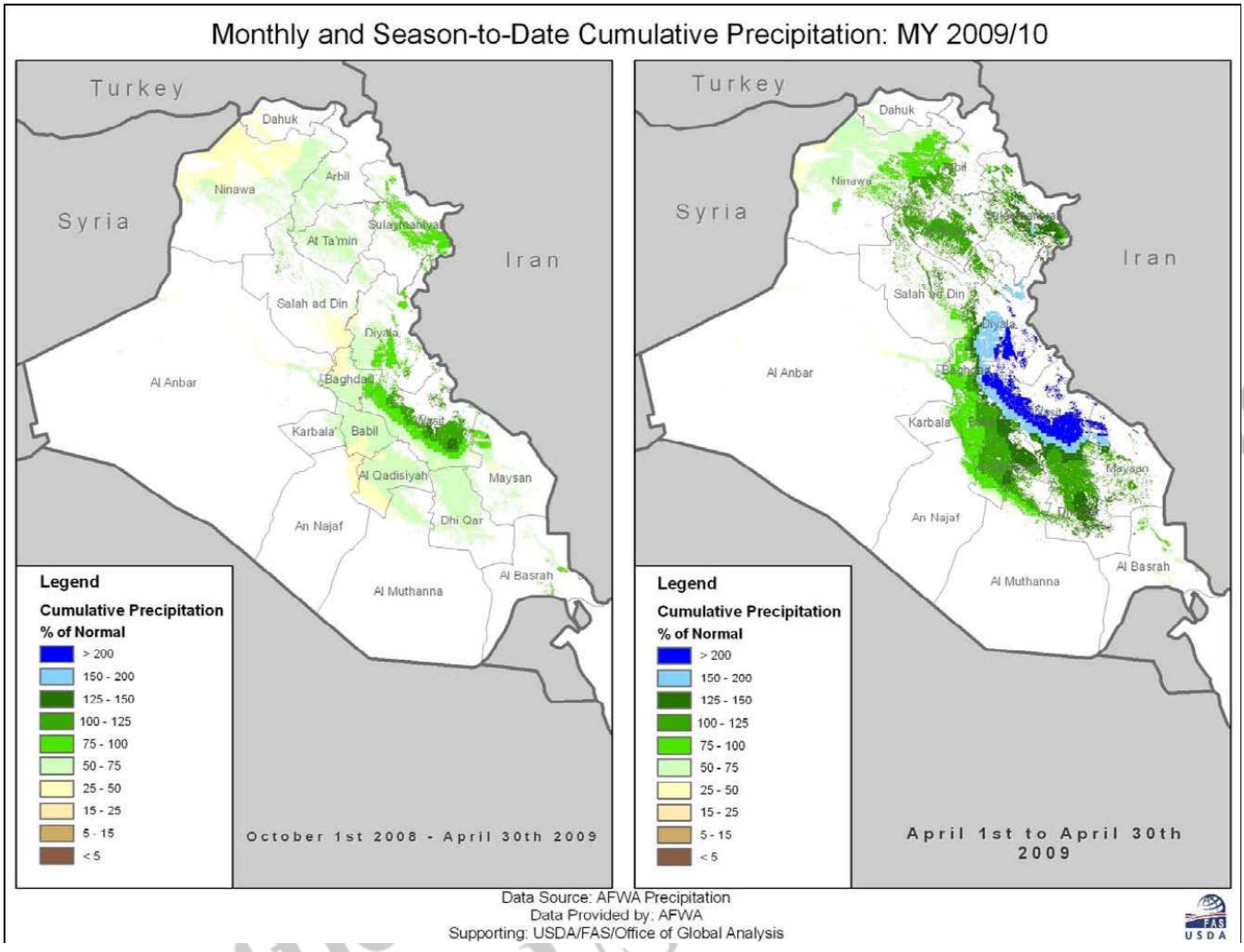


Figure 1: Cumulative precipitation comparison: MY 2009/10 vs. MY 2008/09 and Normal.

Figure 2: Percent of normal monthly and season-to-date precipitation.



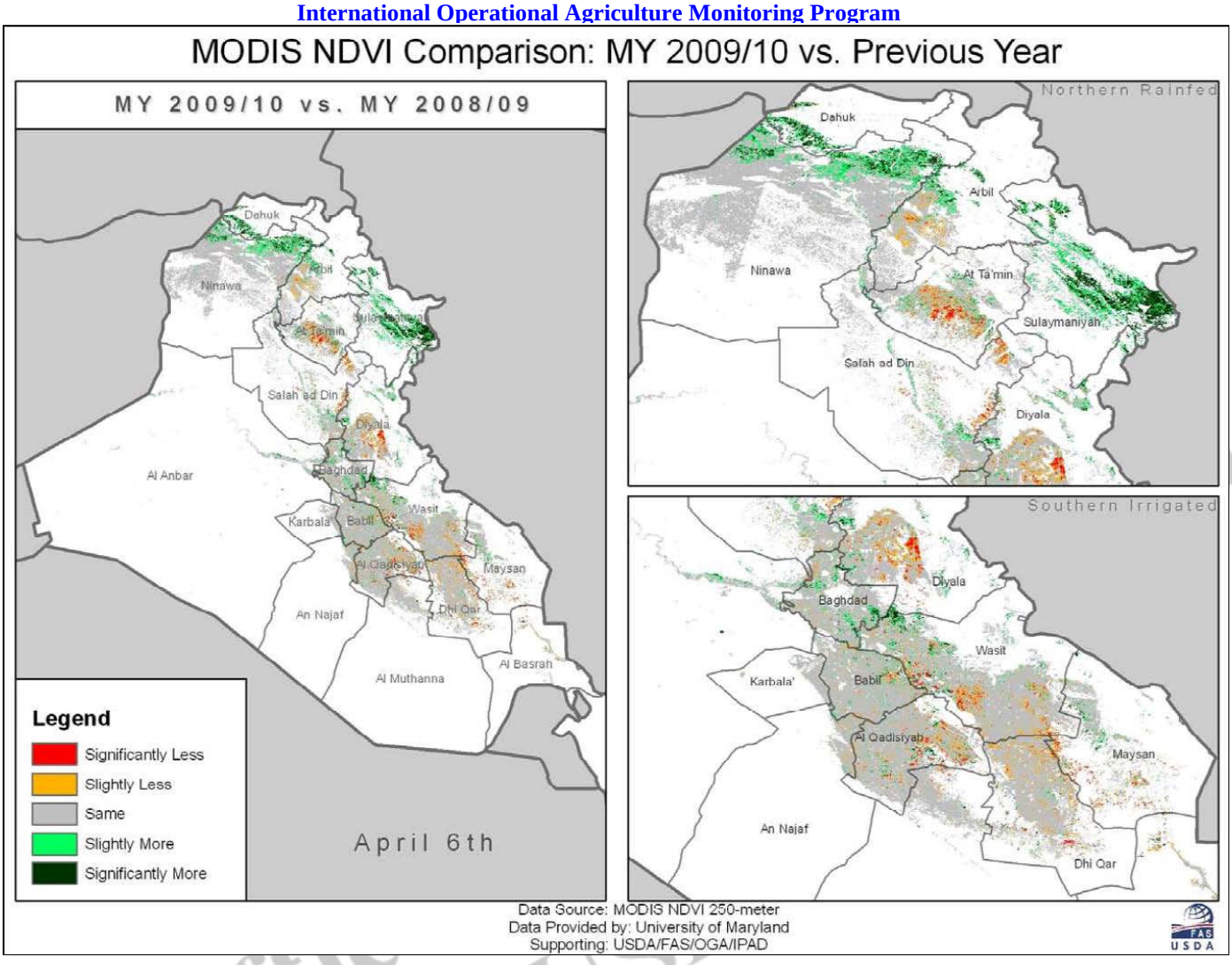


Figure 3: MODIS NDVI change analysis: Current MY 2009/10 compared with previous year MY 2008/09.

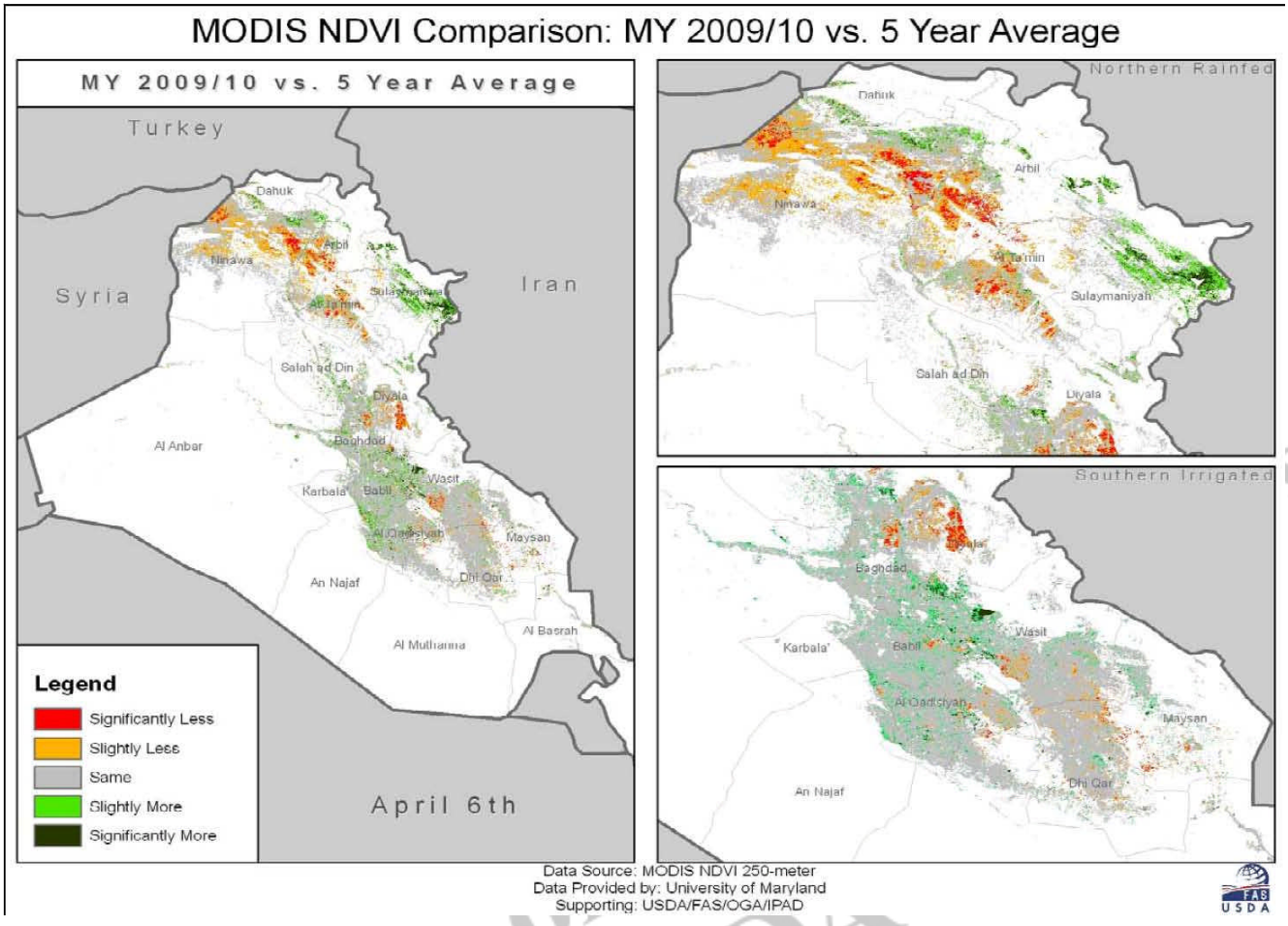


Figure 4: MODIS NDVI change analysis: Current MY 2009/10 compared with the 5-year average.

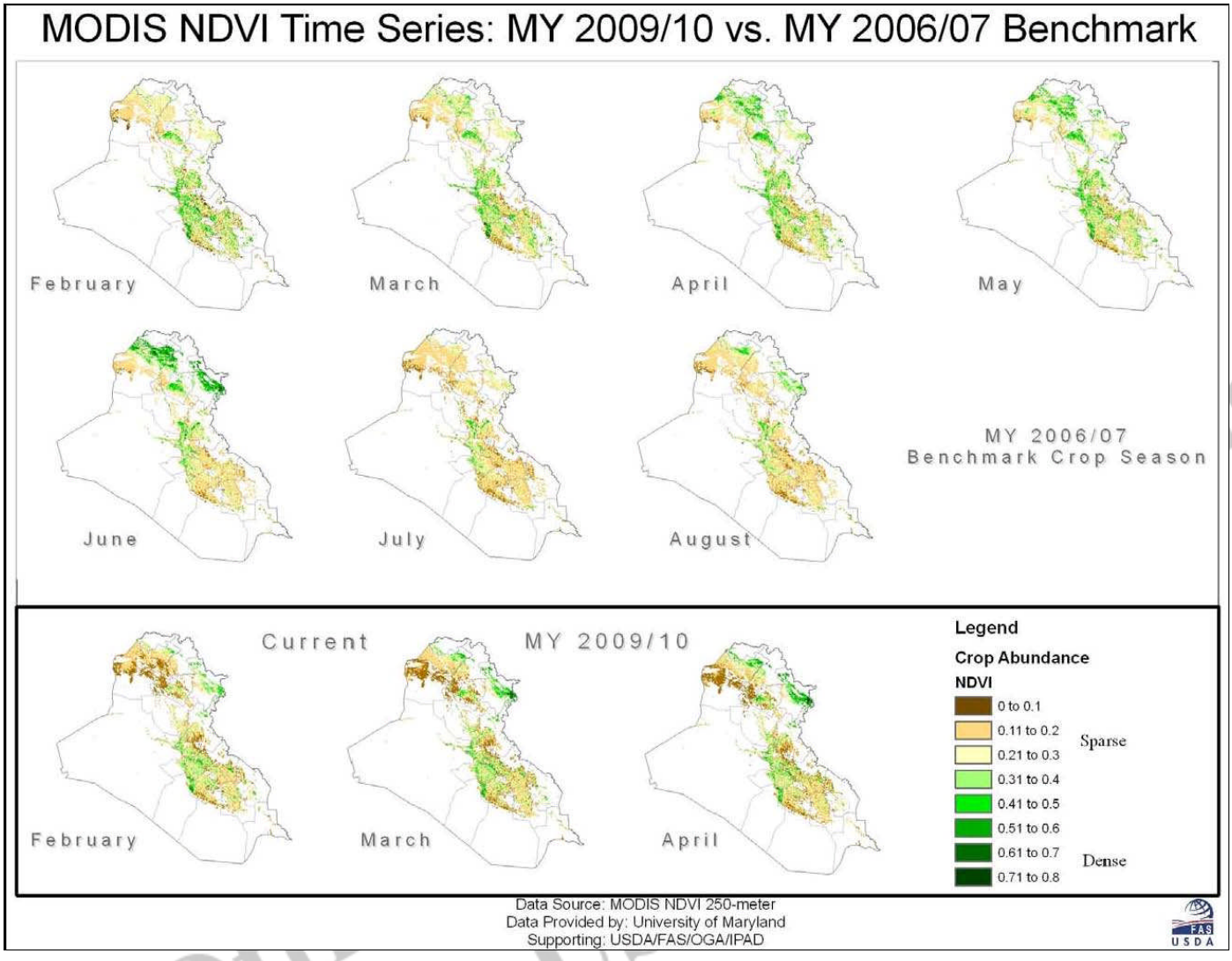


Figure 5: Regional perspective of seasonal NDVI: Current MY 2009/10 compared with benchmark year MY 2006/07.

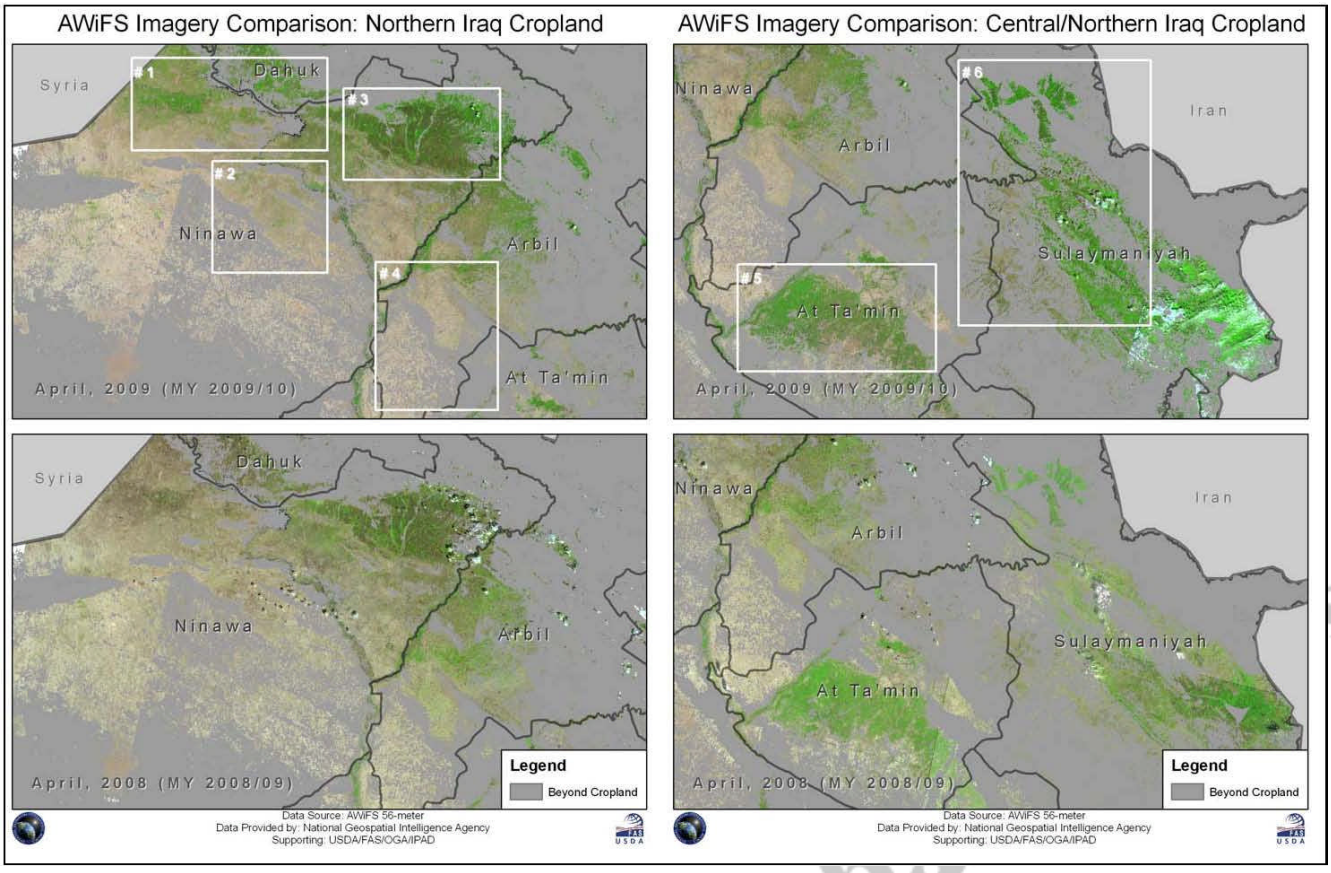
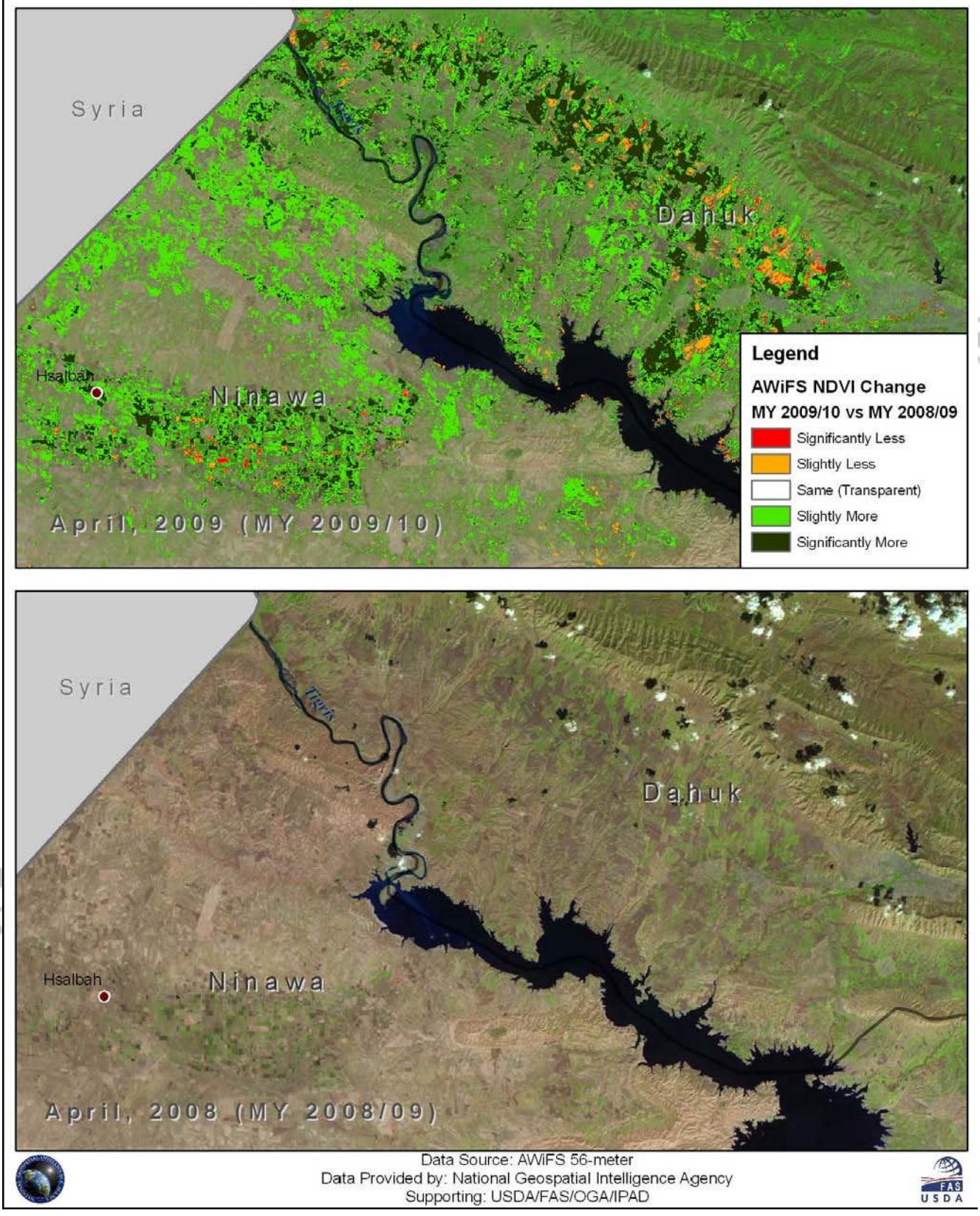


Figure 6: AWiFS IRS P-6 coverage in northern Iraq with crop mask and analysis areas: April 2009 (top images) compared to April 2008 (bottom images).

Figure 7: AWiFS NDVI change analysis revealing improved crop conditions from last year.

AWiFS Imagery Comparison: Dahuk, Ninawa (Area #1)



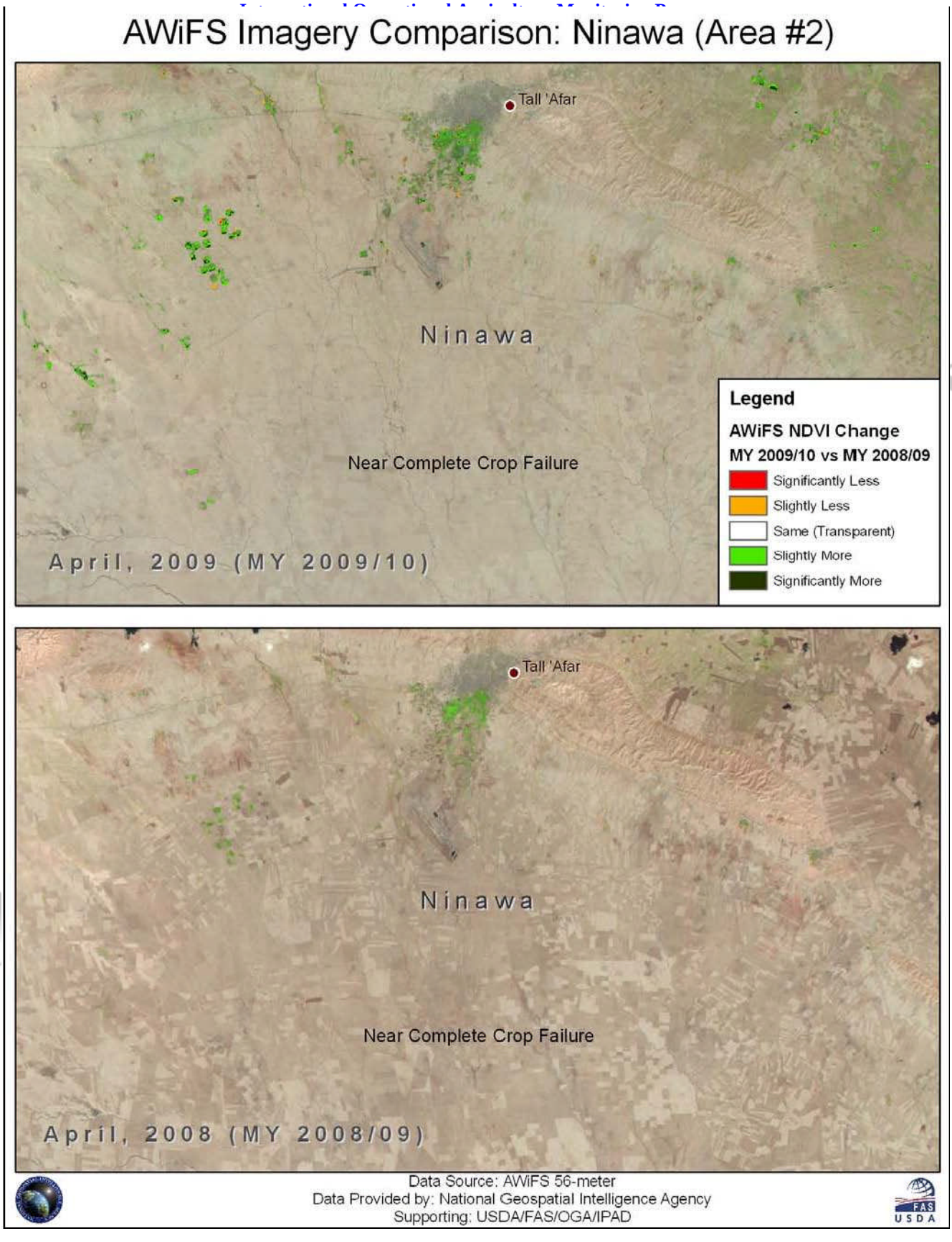


Figure 8: AWiFS NDVI change analysis revealing near total crop failure in majority of agricultural fields.

Figure 9: Quickbird high resolution imagery evidencing large barren agricultural fields.

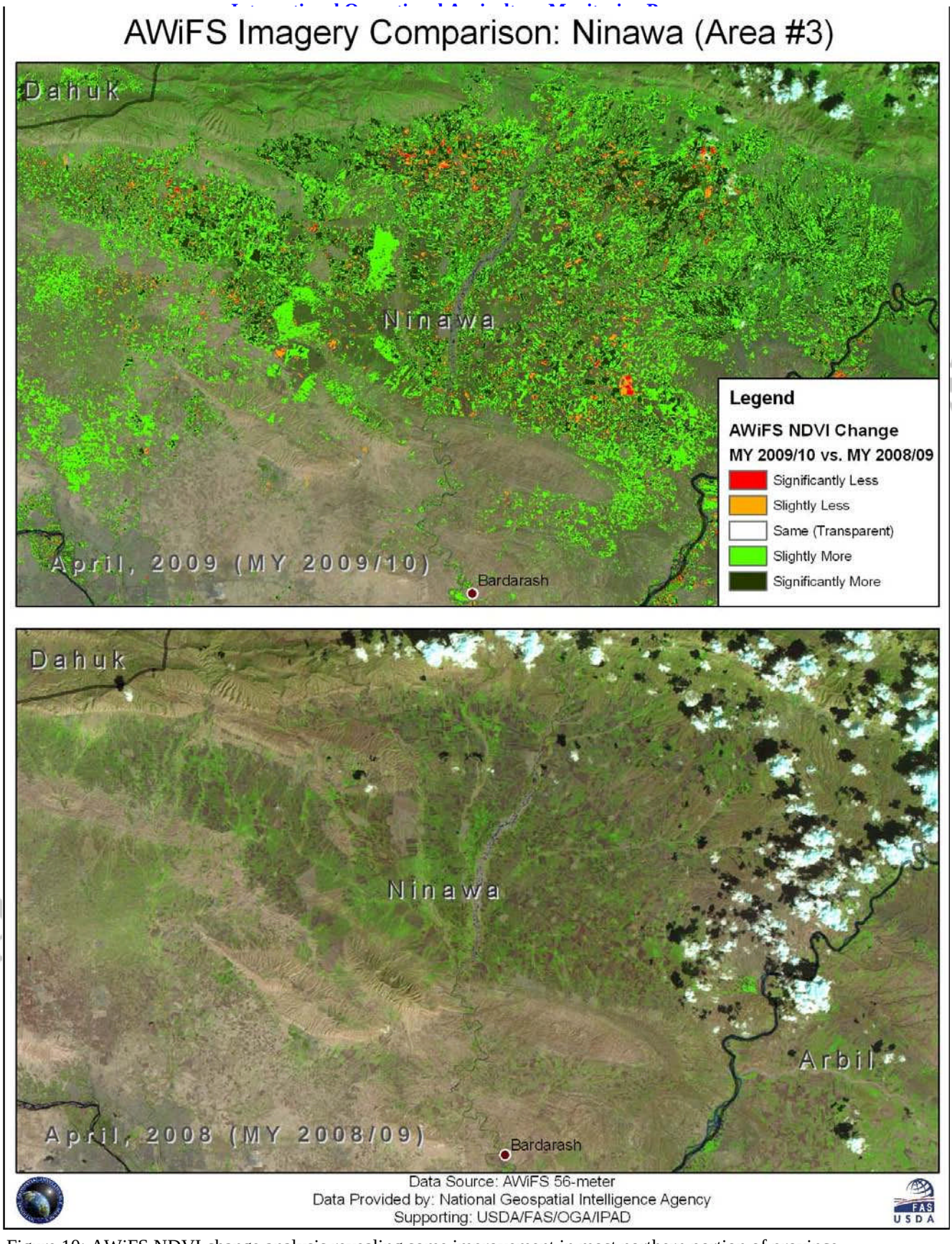
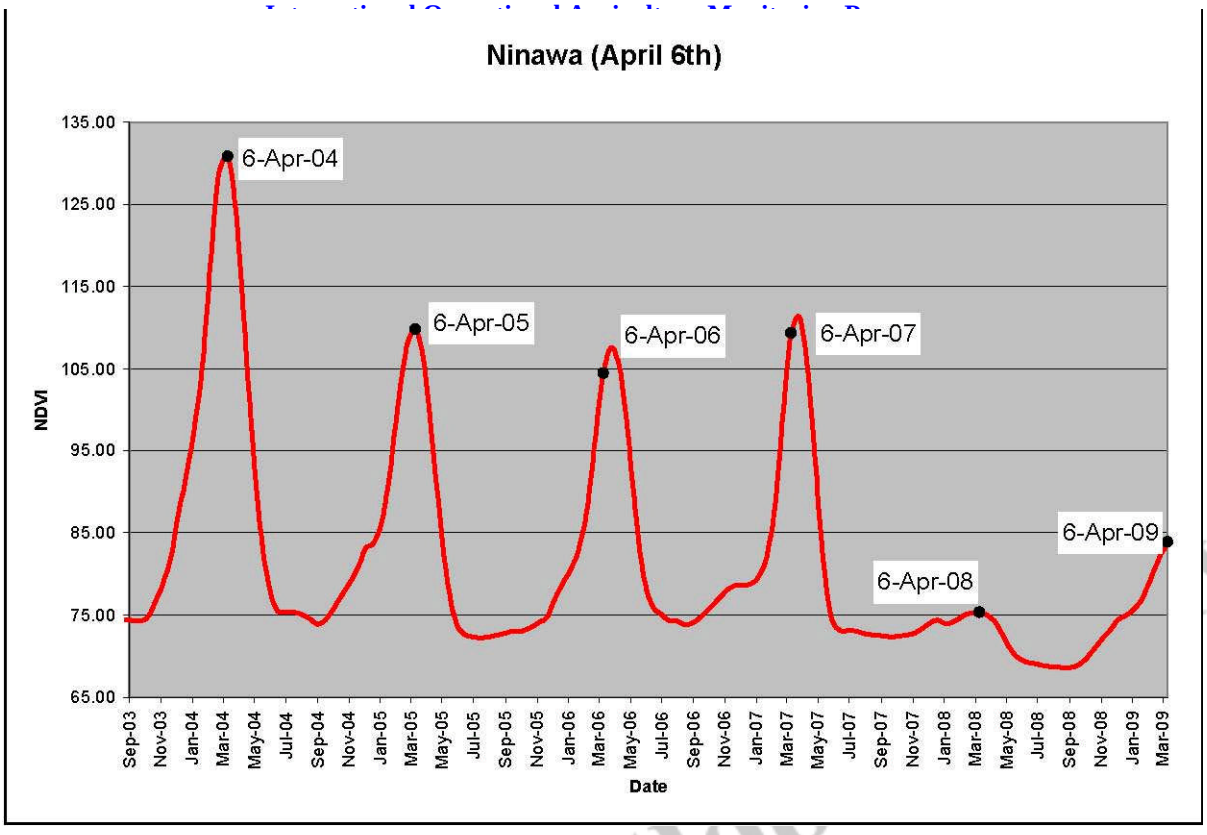


Figure 10: AWiFS NDVI change analysis revealing some improvement in most northern portion of province.



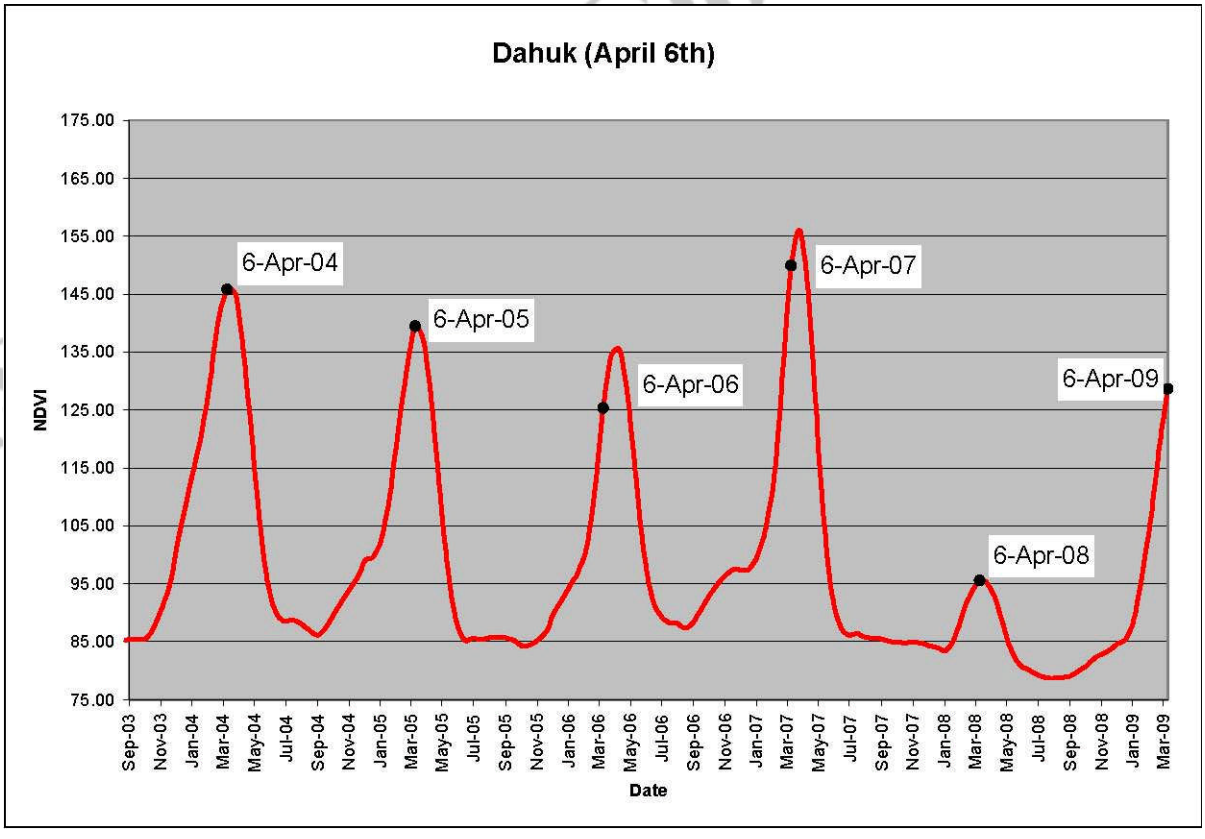


Figure 11: NDVI time-series data showing slight improvement in Ninawa and significant improvement in Dahuk.

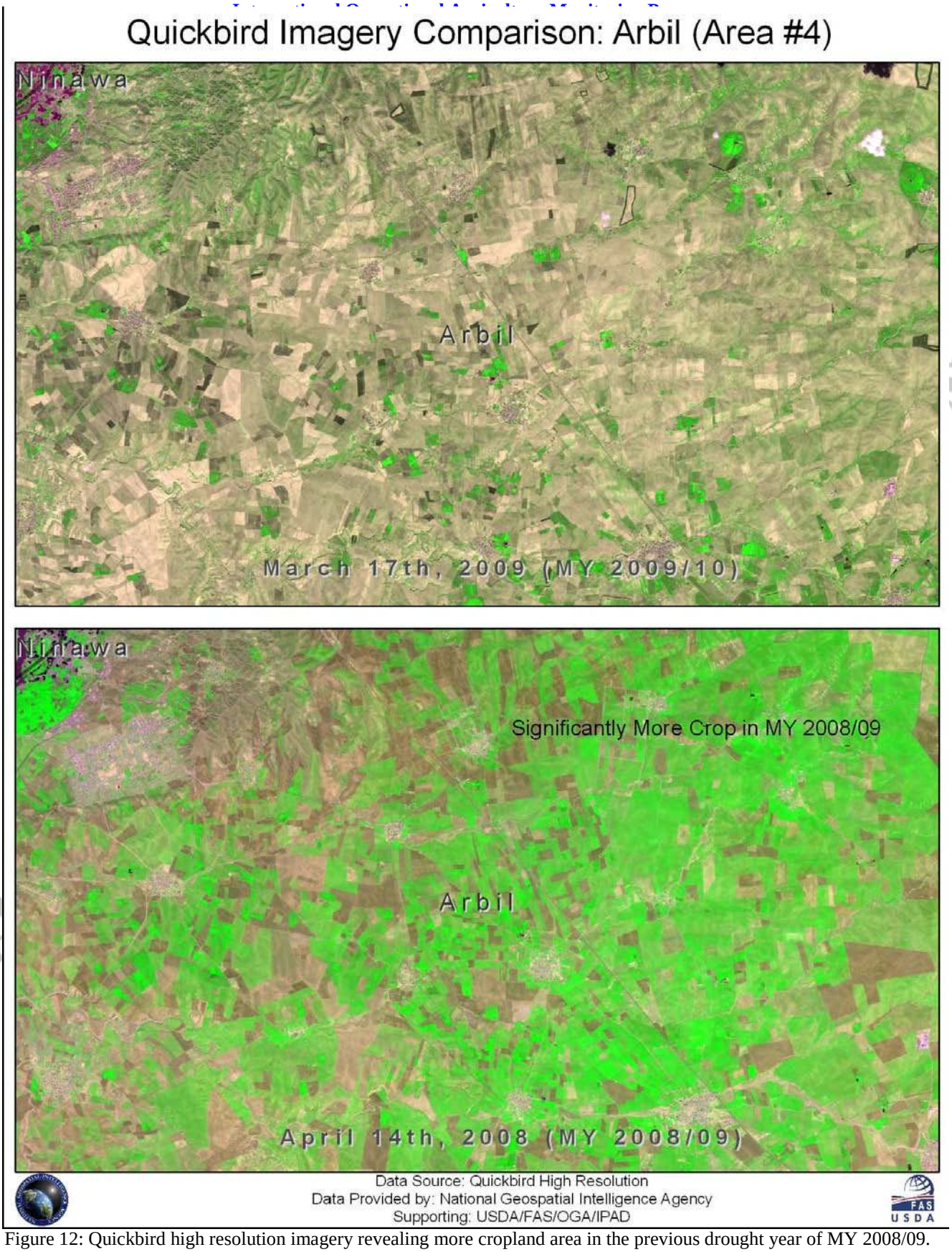


Figure 12: Quickbird high resolution imagery revealing more cropland area in the previous drought year of MY 2008/09.

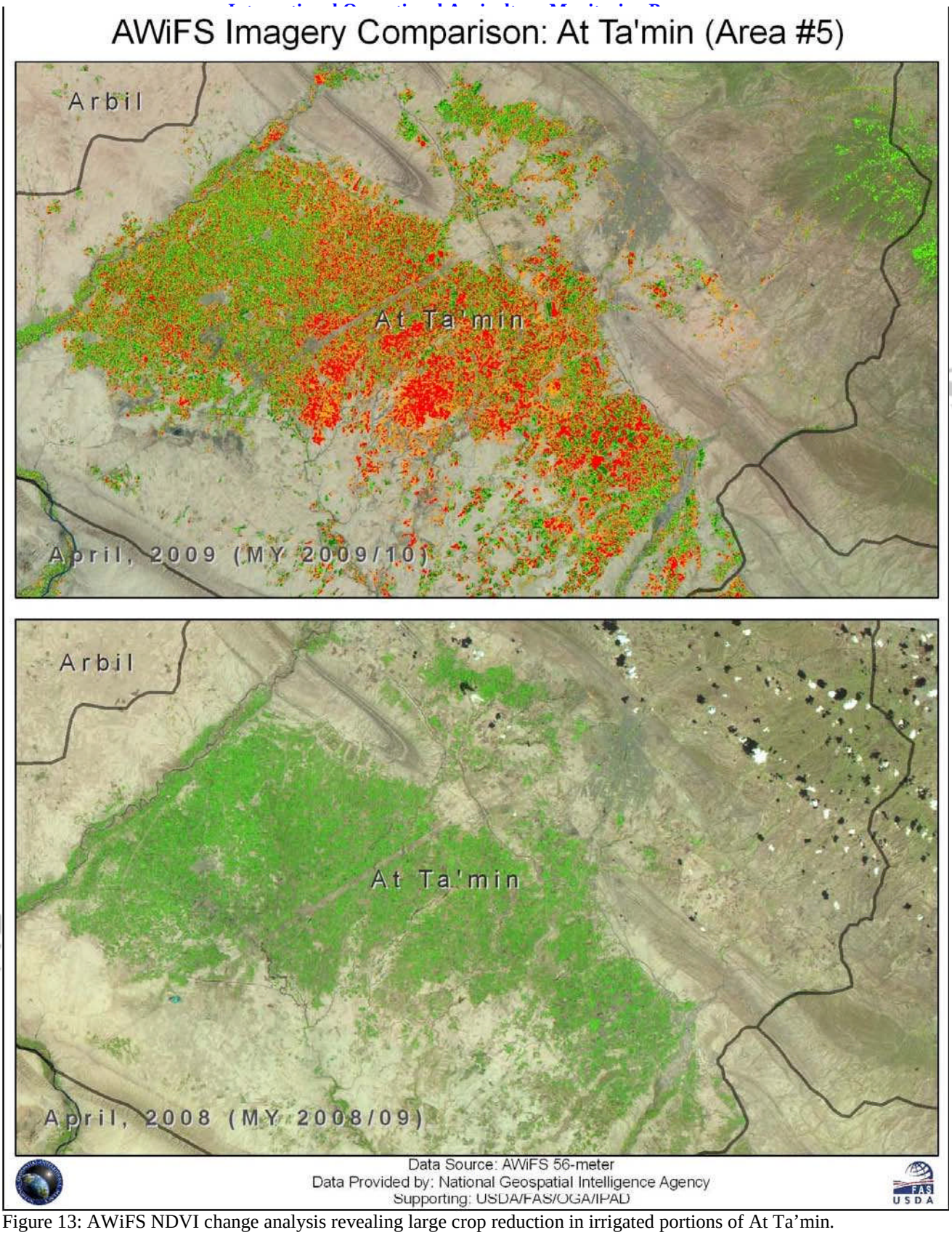
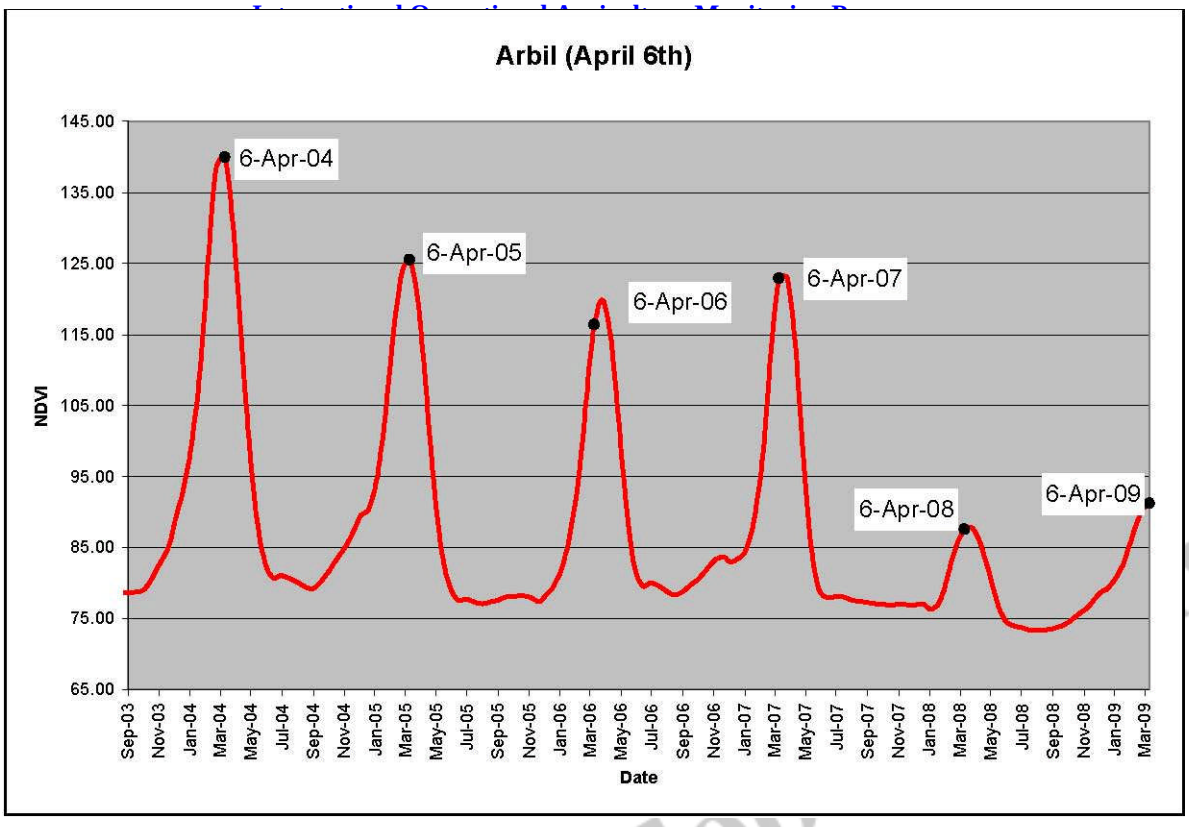


Figure 13: AWiFS NDVI change analysis revealing large crop reduction in irrigated portions of At Ta'min.



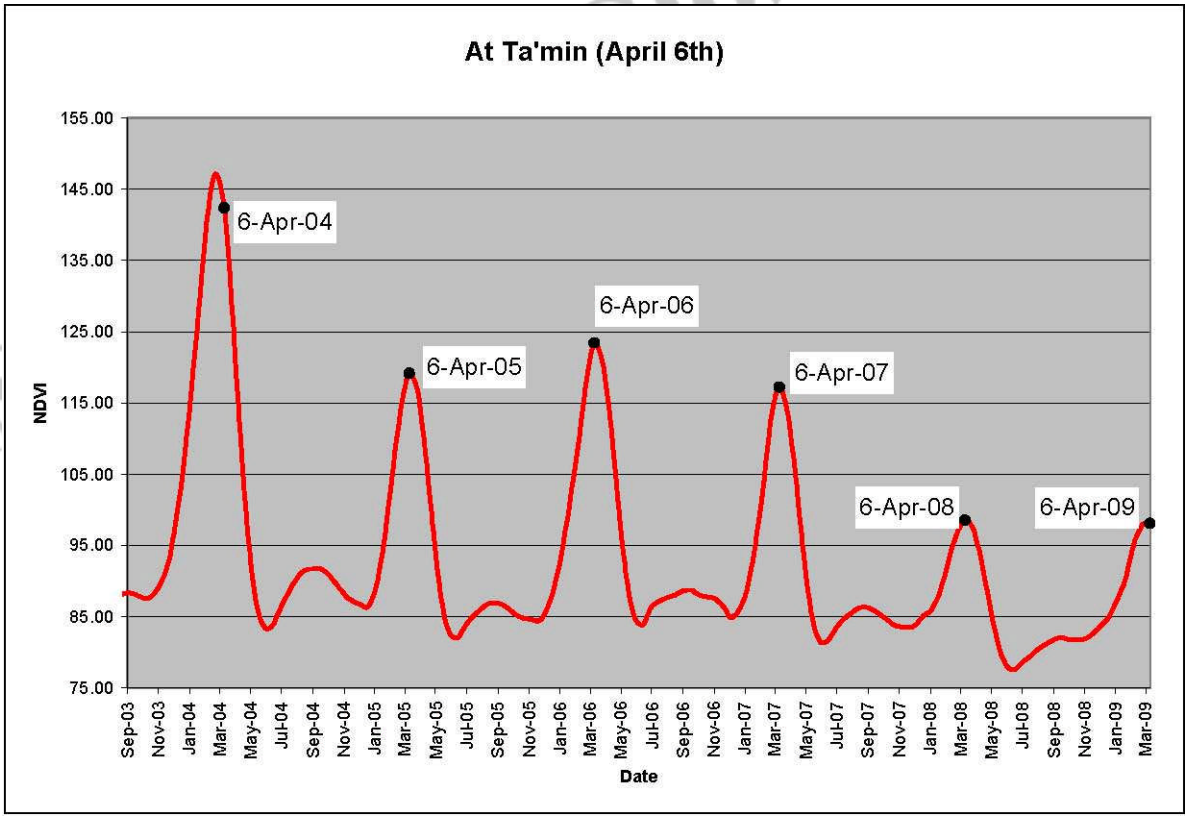
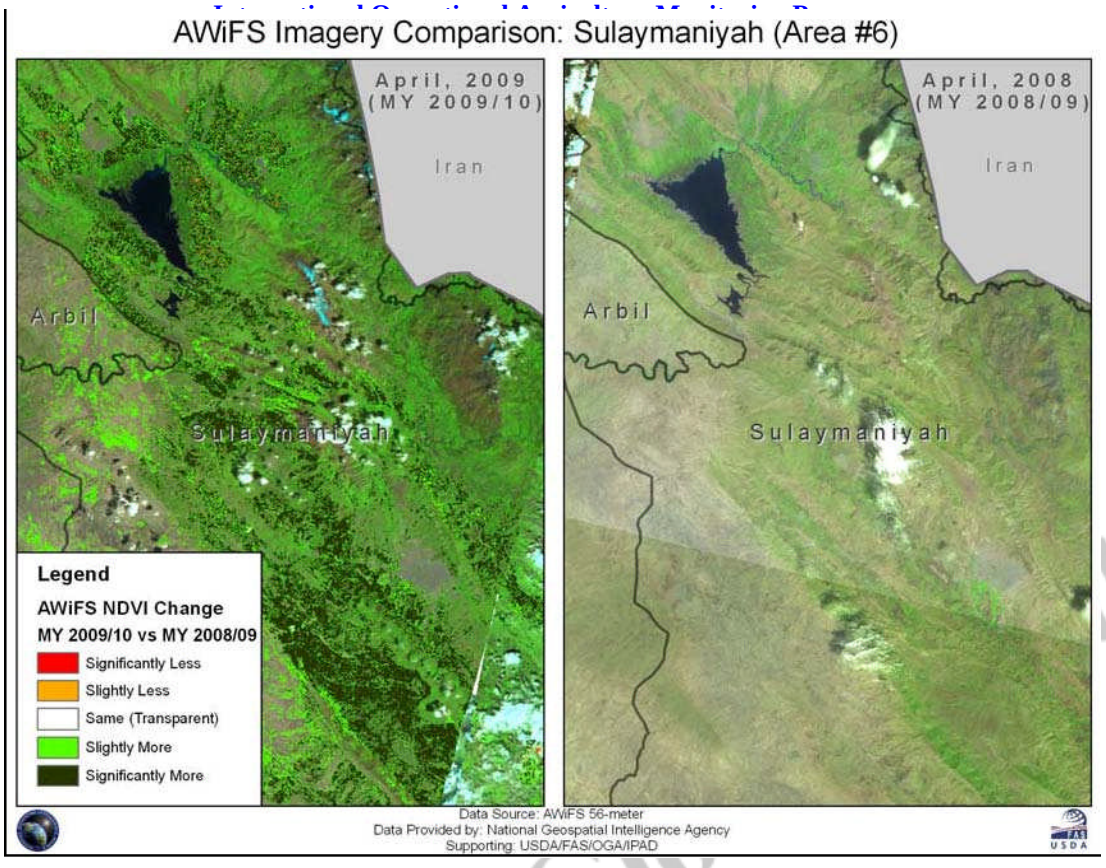


Figure 14: NDVI time-series data showing similar conditions to previous year for Arbil and At Ta'min.



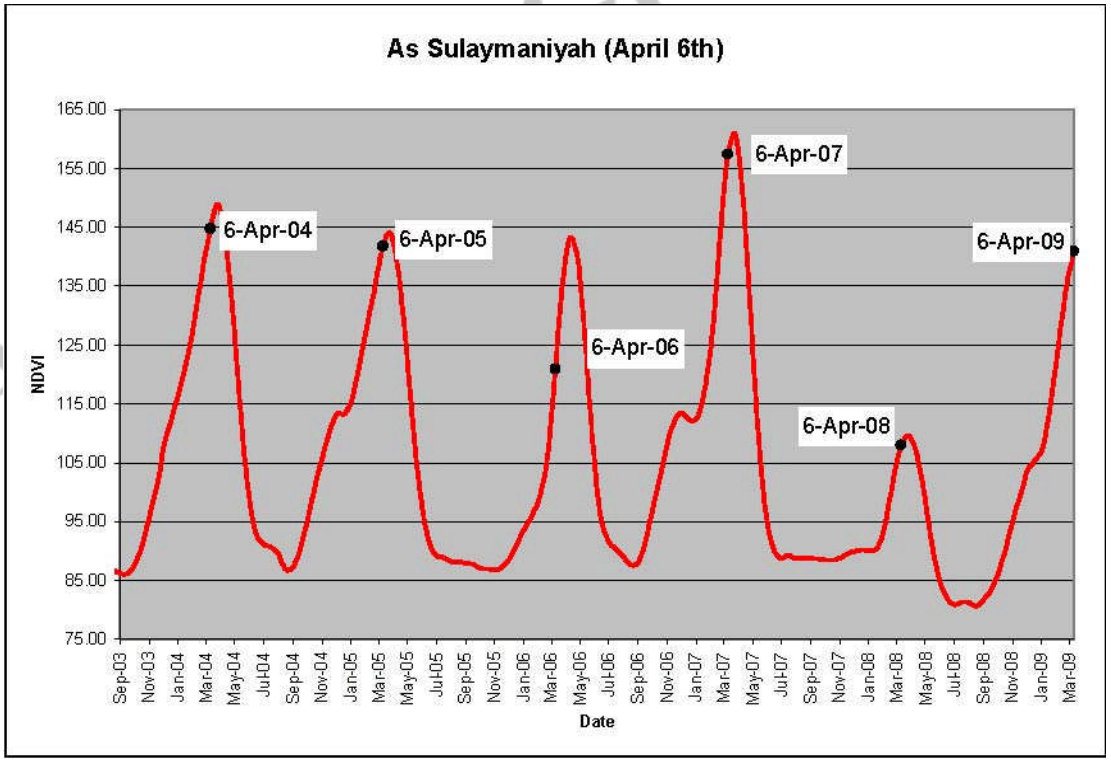
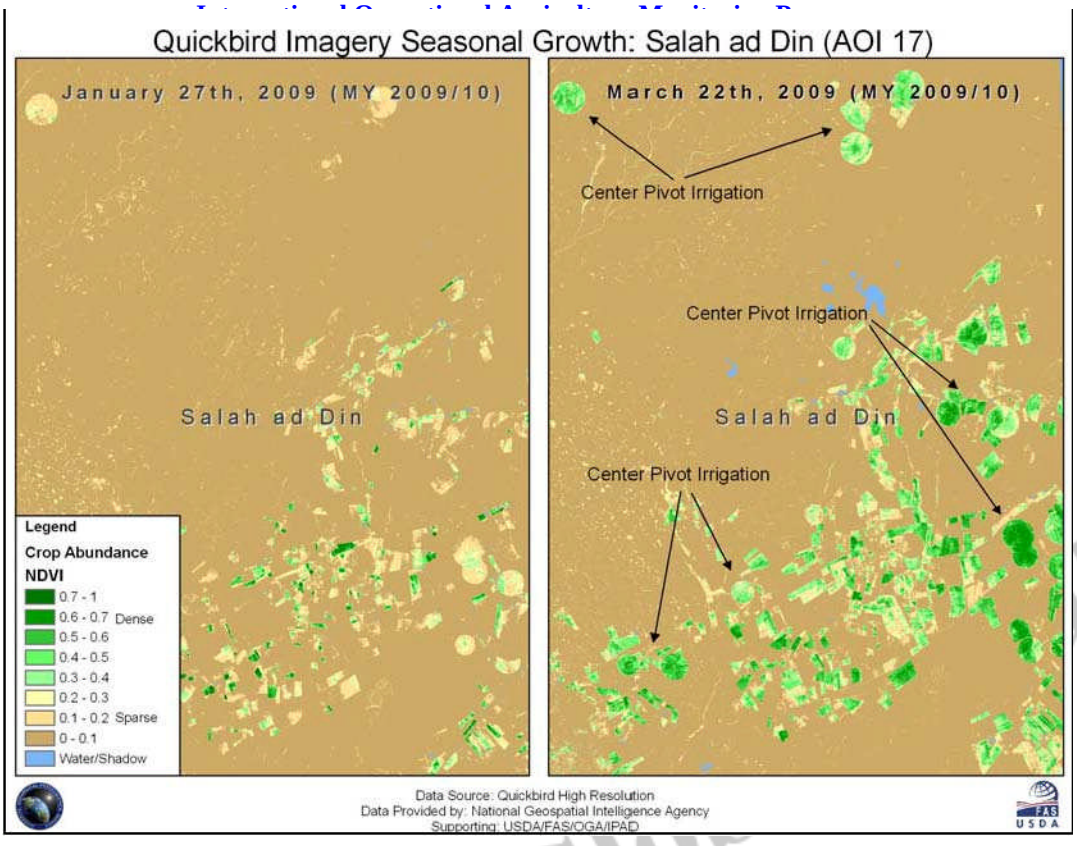


Figure 15: AWiFS NDVI change analysis revealing significant crop increases in As Sulaymaniyah. Sulaymaniyah produces roughly 8% of total barley.



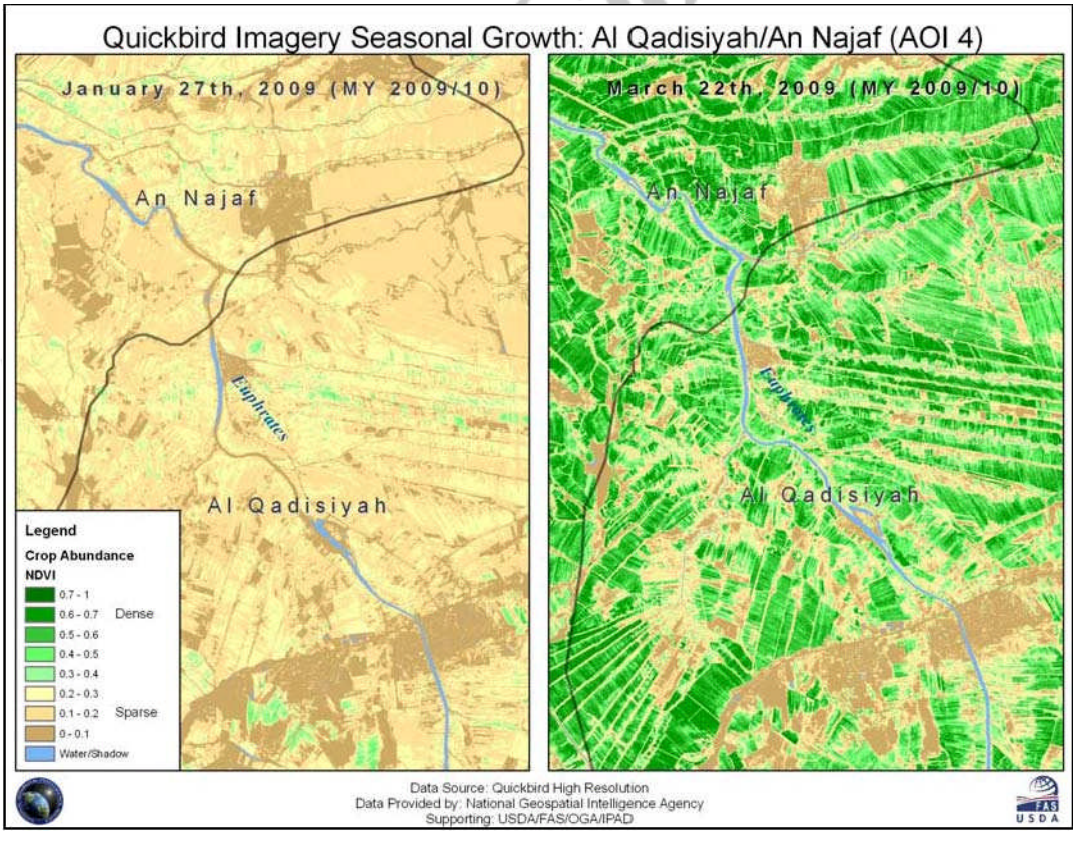


Figure 16: Seasonal crop growth for MY 2009/10. Crop area has increased since the previous year, but yields remain low.

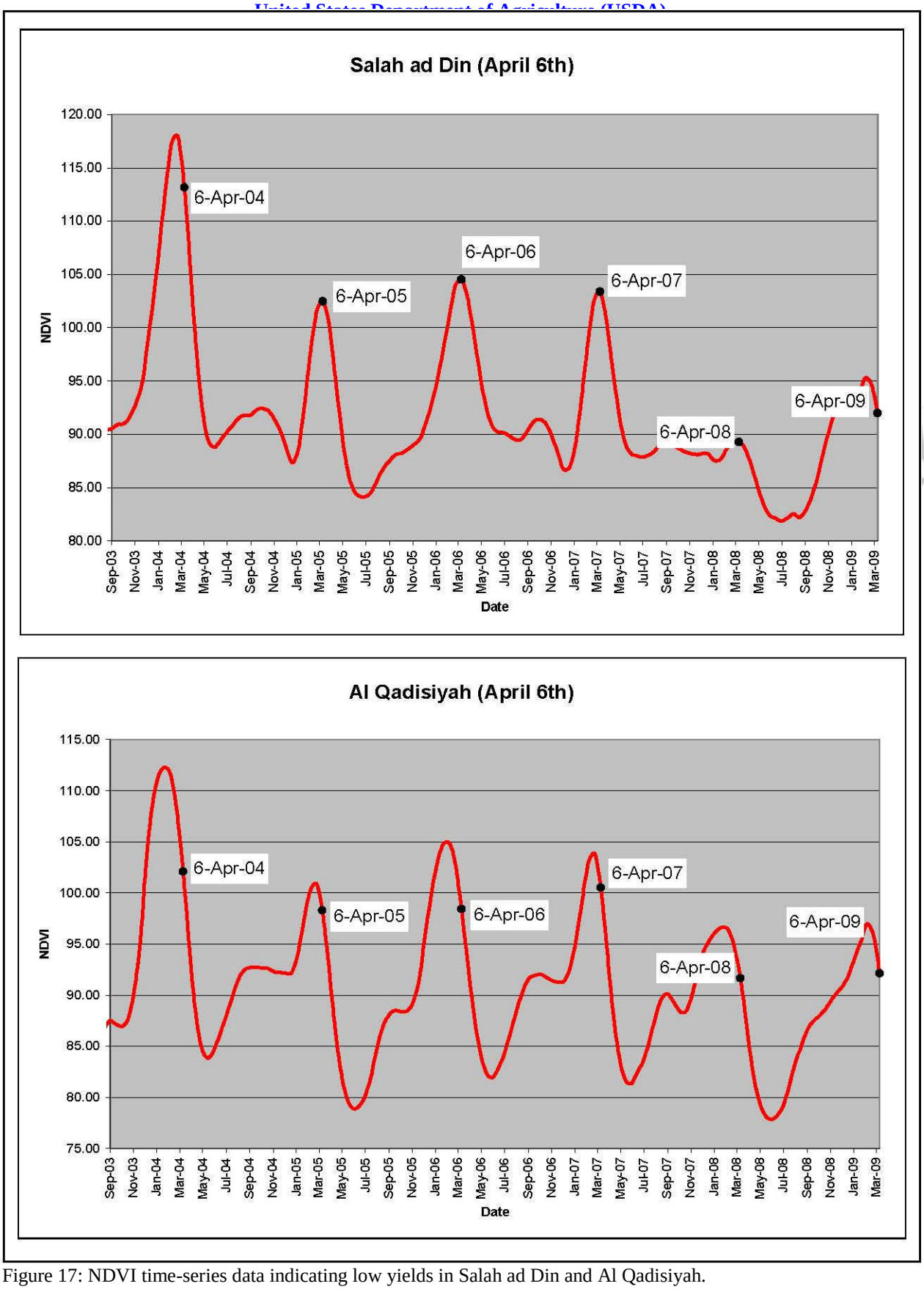
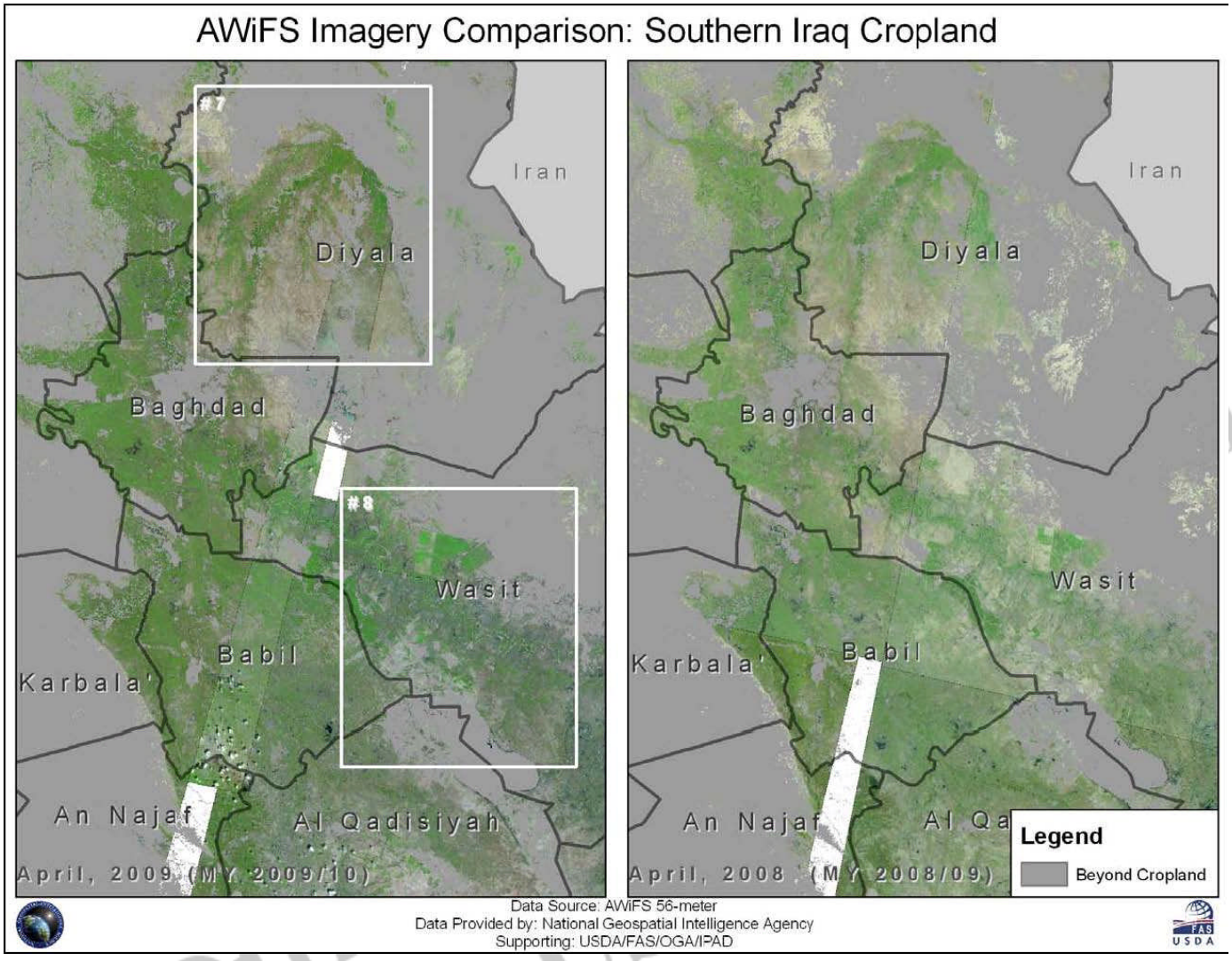


Figure 17: NDVI time-series data indicating low yields in Salah ad Din and Al Qadisiyah.

Figure 18: AWiFS IRS P-6 coverage in northern Iraq with crop mask and analysis areas: April 2009 (left) compared to April 2008 (right).



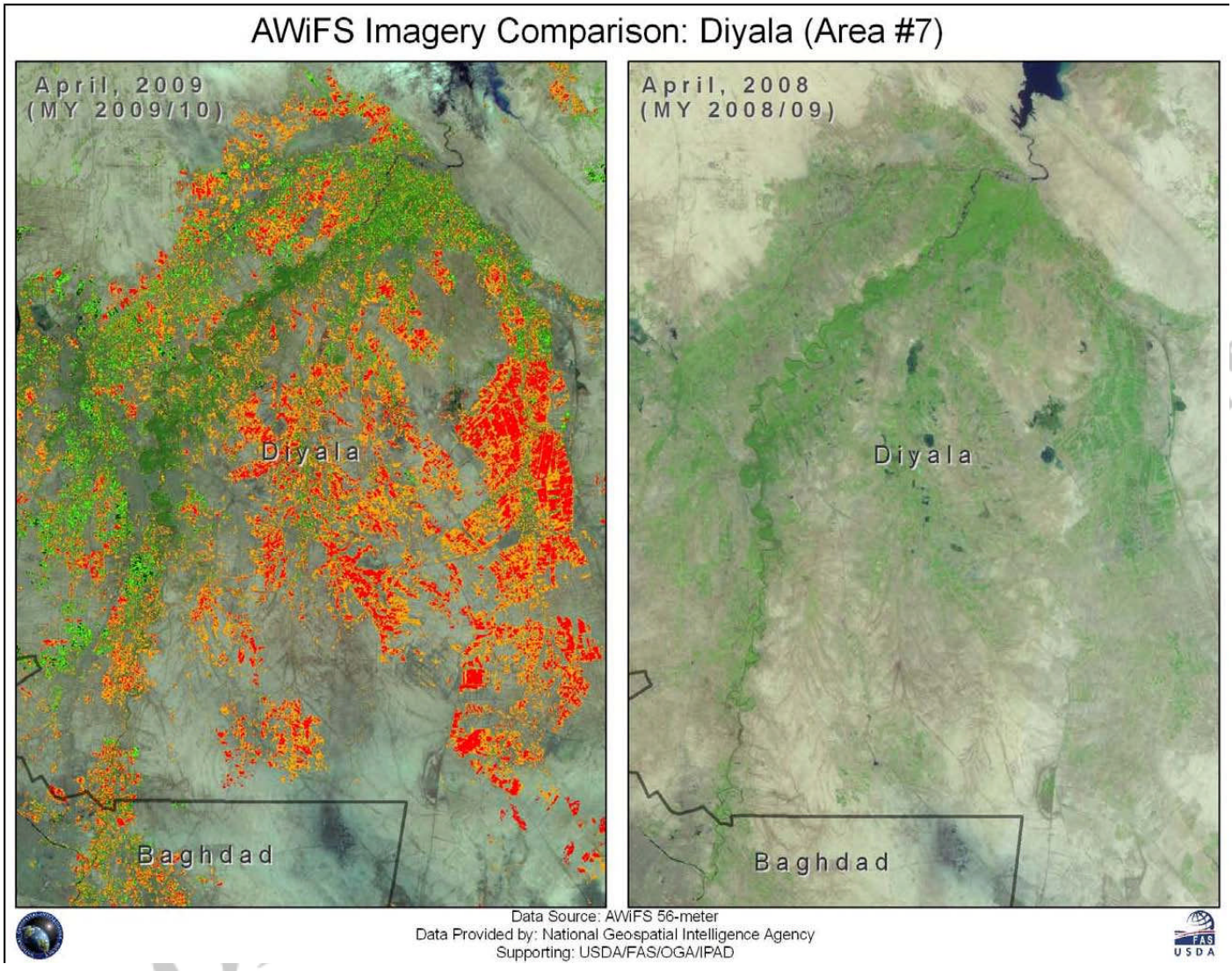


Figure 19: AWiFS NDVI change analysis revealing large crop reduction in irrigated portions of Diyala.

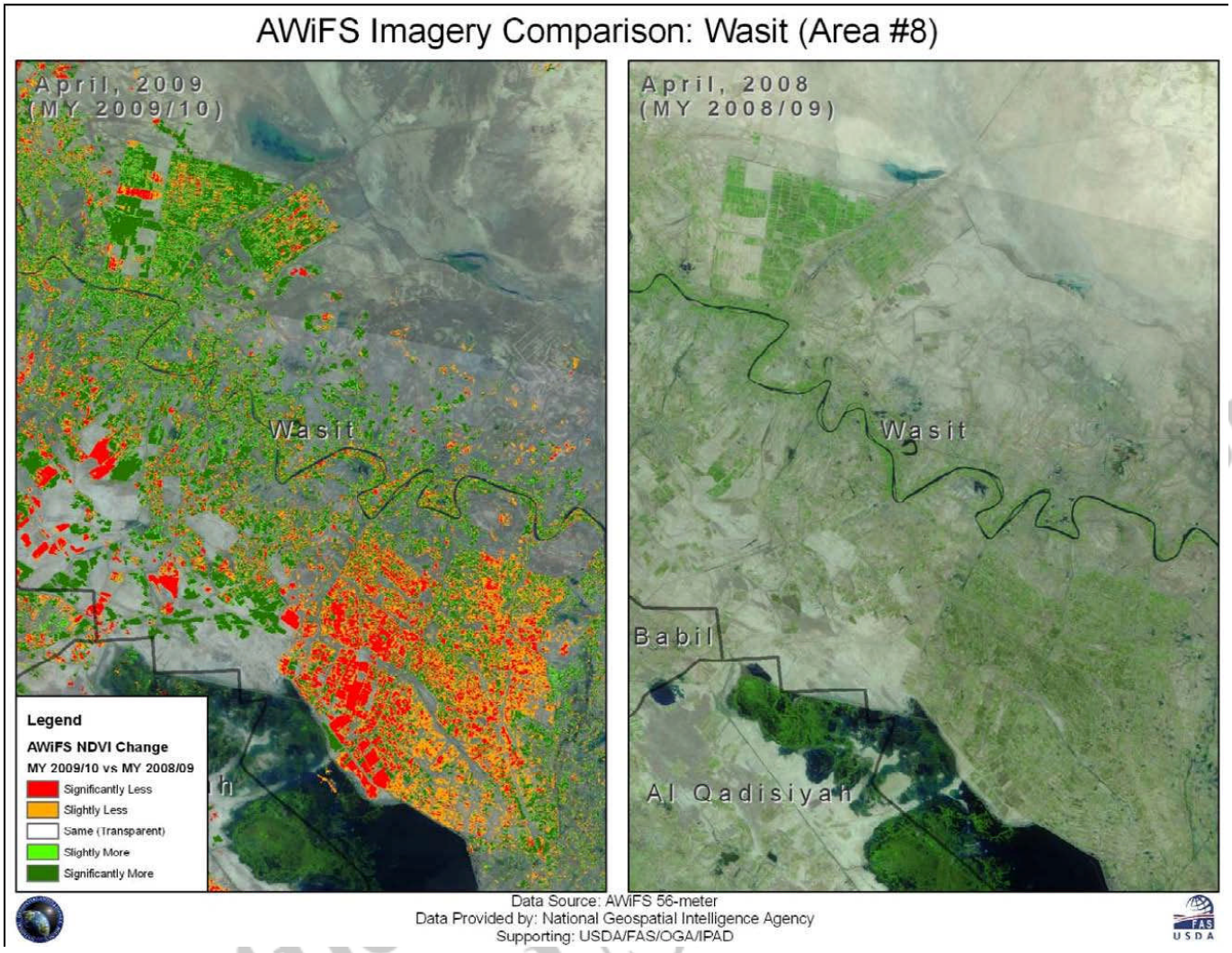


Figure 20: AWiFS NDVI change analysis revealing large crop increases and reductions in irrigated portions of Wasit.

IRAQ: Regional Wheat Statistics (Mha; MMT)

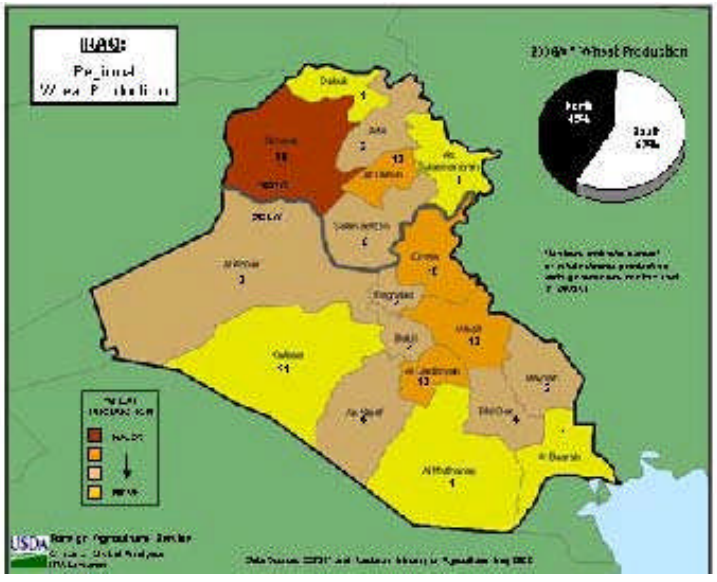
REGION	Province		2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	5-Year Average 5 Yr Avg	Change from Last Year Actual	Change from Last Year Percent
NORTH	Arbil										
		Area	0.099	0.117	0.127	0.120	0.110	0.043	0.115	-0.067	-60.91%
		Yield	0.944	0.624	1.056	0.667	0.325	0.358	0.662	0.033	10.22%
		Prod	0.093	0.073	0.134	0.080	0.036	0.015	0.083	-0.020	-56.92%
	Sulaymaniyah										
		Area	0.070	0.153	0.120	0.120	0.055	0.095	0.104	0.040	72.73%
		Yield	0.357	0.244	0.272	0.250	0.125	0.246	0.249	0.121	96.09%
		Prod	0.025	0.037	0.033	0.030	0.007	0.023	0.026	0.016	238.70%
	Dahuk										
		Area	0.098	0.102	0.091	0.100	0.050	0.071	0.088	0.021	42.00%
		Yield	0.325	0.188	0.349	0.300	0.138	0.282	0.264	0.144	104.28%
		Prod	0.032	0.019	0.032	0.030	0.007	0.020	0.024	0.013	190.07%
	Ninawa										
		Area	0.613	0.551	0.489	0.464	0.024	0.079	0.428	0.056	236.17%
		Yield	0.872	0.687	1.024	0.691	0.681	0.687	0.774	0.006	0.90%
		Prod	0.535	0.378	0.501	0.320	0.016	0.054	0.350	0.038	239.21%
	At Ta'min										
		Area	0.160	0.195	0.141	0.205	0.120	0.100	0.164	-0.020	-16.46%
		Yield	1.478	1.758	1.704	1.408	1.393	1.279	1.504	-0.114	-8.22%
		Prod	0.237	0.343	0.241	0.289	0.167	0.128	0.255	-0.039	-23.32%
	Salah ad Din										
		Area	0.107	0.110	0.108	0.107	0.070	0.106	0.100	0.036	52.08%
		Yield	0.828	1.036	1.137	1.385	0.915	0.971	1.045	0.056	6.10%
		Prod	0.088	0.114	0.123	0.148	0.064	0.103	0.108	0.039	61.36%
SOUTH	Diyala										
		Area	0.087	0.109	0.113	0.106	0.085	0.068	0.100	-0.017	-19.91%
		Yield	1.527	2.031	2.277	2.194	1.757	1.678	1.911	-0.080	-4.54%
		Prod	0.134	0.220	0.258	0.233	0.149	0.114	0.199	-0.035	-23.54%
	Wasit										
		Area	0.148	0.166	0.157	0.164	0.159	0.150	0.159	-0.009	-5.60%
		Yield	1.903	2.467	1.833	1.900	1.289	1.291	1.781	0.002	0.12%
		Prod	0.282	0.411	0.288	0.312	0.205	0.194	0.300	-0.011	-5.49%
	Al Qadisiyah										
		Area	0.093	0.094	0.095	0.092	0.080	0.094	0.091	0.014	17.35%
		Yield	1.567	2.213	2.514	2.580	1.784	1.928	2.098	0.144	8.07%
		Prod	0.146	0.209	0.238	0.238	0.143	0.181	0.195	0.038	26.82%
	Babil										
		Area	0.049	0.068	0.068	0.065	0.070	0.069	0.064	-0.001	-1.99%
		Yield	1.042	1.379	1.362	1.529	1.459	1.461	1.372	0.002	0.15%
		Prod	0.051	0.093	0.093	0.100	0.103	0.101	0.088	-0.002	-1.84%
	An Najaf										
		Area	0.046	0.048	0.045	0.050	0.047	0.046	0.047	-0.001	-1.92%
		Yield	1.180	1.641	2.359	2.725	1.819	1.991	1.953	0.172	9.47%
		Prod	0.054	0.078	0.107	0.135	0.085	0.092	0.092	0.006	7.37%
	Baghdad										
		Area	0.043	0.060	0.059	0.048	0.062	0.055	0.055	-0.007	-10.71%
		Yield	1.462	1.617	1.598	1.667	1.563	1.589	1.583	0.026	1.66%
		Prod	0.063	0.097	0.095	0.081	0.096	0.087	0.086	-0.009	-9.24%
	Al Anbar										
		Area	0.043	0.035	0.056	0.057	0.043	0.052	0.047	0.009	20.93%
		Yield	1.220	1.098	1.380	1.408	1.335	1.342	1.297	0.007	0.53%
		Prod	0.053	0.038	0.077	0.080	0.057	0.070	0.061	0.012	21.57%
	Karbala										
		Area	0.006	0.007	0.004	0.002	0.002	0.005	0.004	0.003	127.27%
		Yield	1.037	0.927	1.258	1.976	1.773	1.772	1.457	-0.001	-0.04%
		Prod	0.006	0.007	0.005	0.005	0.004	0.009	0.005	0.005	127.18%
	Maysan										
		Area	0.077	0.088	0.087	0.094	0.082	0.050	0.086	-0.032	-39.25%
		Yield	1.270	1.681	1.438	1.308	0.807	0.822	1.221	0.015	1.86%
		Prod	0.098	0.148	0.125	0.124	0.066	0.041	0.112	-0.025	-38.12%
	Dhi Qar										
		Area	0.032	0.046	0.061	0.059	0.049	0.034	0.049	-0.015	-29.90%
		Yield	1.574	1.402	1.721	1.704	1.557	1.549	1.585	-0.008	-0.49%
		Prod	0.050	0.064	0.105	0.101	0.076	0.053	0.079	-0.023	-30.24%
	Al Muthanna										
		Area	0.018	0.012	0.012	0.011	0.009	0.010	0.013	0.001	12.36%
		Yield	1.076	1.081	1.225	1.255	0.798	1.012	1.074	0.214	26.86%
		Prod	0.020	0.013	0.015	0.014	0.007	0.010	0.014	0.003	42.54%
	Al Basrah										
		Area	0.016	0.014	0.017	0.017	0.017	0.016	0.016	-0.001	-5.33%
		Yield	0.959	1.026	0.956	1.328	0.988	1.111	1.061	0.123	12.43%
		Prod	0.015	0.014	0.016	0.022	0.017	0.018	0.017	0.001	6.44%
	Total										
		Area	1.807	1.975	1.852	1.883	1.133	1.143	1.730	0.011	0.93%
		Yield	1.097	1.194	1.342	1.244	1.152	1.149	1.206	-0.003	-0.27%
		Prod	1.983	2.358	2.485	2.343	1.304	1.313	2.086	0.009	0.66%

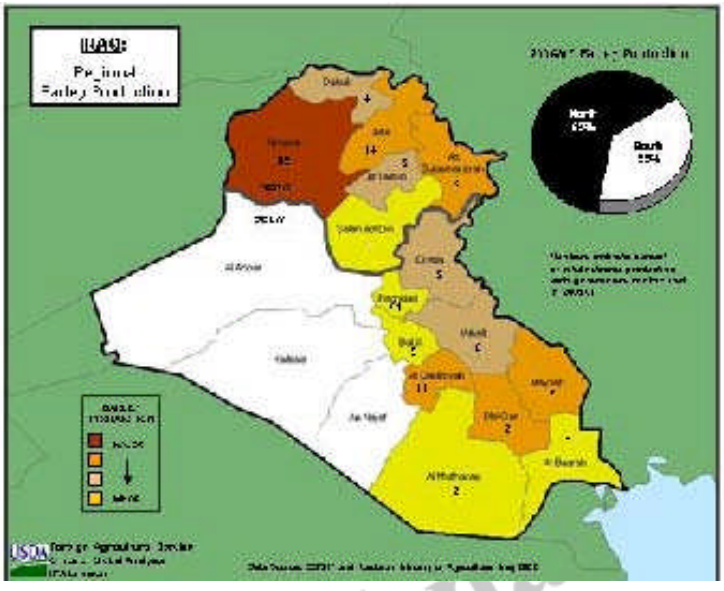
April 30th, 2009

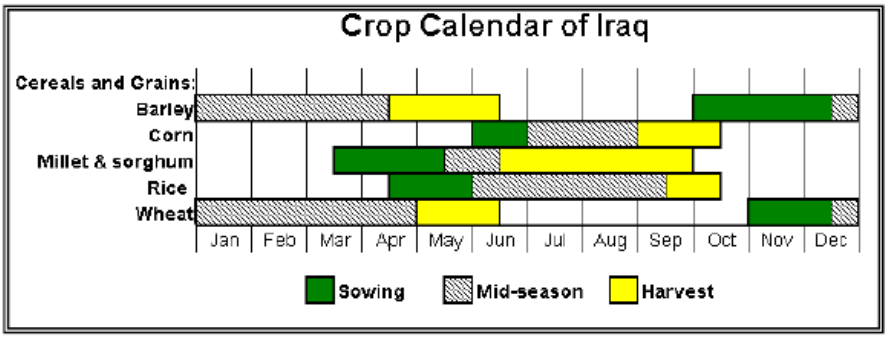
IRAQ: Regional Barley Statistics (Mha; MMT)

REGION	Province		2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	5-Year Average 5 Yr Avg	Change from Last Year Actual	Change from Last Year Percent
NORTH	Arbil										
		Area	0.086	0.271	0.243	0.250	0.010	0.064	0.172	0.054	540.00%
		Yield	0.936	0.504	0.700	0.560	0.390	0.460	0.618	0.070	17.95%
		Prod	0.081	0.136	0.170	0.140	0.004	0.029	0.106	0.026	654.87%
	Sulaymaniyah										
		Area	0.052	0.125	0.108	0.110	0.040	0.080	0.087	0.040	100.00%
		Yield	1.376	0.964	0.964	0.727	0.348	0.893	0.876	0.546	157.04%
		Prod	0.072	0.120	0.104	0.080	0.014	0.071	0.078	0.058	414.07%
	Dahuk										
		Area	0.027	0.037	0.041	0.050	0.020	0.028	0.035	0.008	40.00%
		Yield	1.156	0.504	1.268	0.800	0.400	0.789	0.826	0.389	97.23%
		Prod	0.032	0.018	0.052	0.040	0.008	0.022	0.030	0.014	176.12%
	Ninawa										
		Area	0.529	0.614	0.595	0.615	0.001	0.087	0.471	0.086	14400.00%
		Yield	0.709	0.411	0.675	0.528	0.667	0.678	0.598	0.011	1.65%
		Prod	0.375	0.252	0.401	0.325	0.000	0.059	0.271	0.059	14639.98%
	At Ta'min										
		Area	0.010	0.023	0.029	0.030	0.012	0.013	0.021	0.001	10.17%
		Yield	0.865	1.022	1.119	1.000	1.339	0.939	1.069	-0.400	-29.87%
		Prod	0.009	0.024	0.032	0.030	0.016	0.012	0.022	-0.004	-22.74%
	Salah ad Din										
		Area	0.039	0.028	0.015	0.015	0.007	0.017	0.021	0.010	133.33%
		Yield	0.358	0.287	0.727	0.333	0.792	0.783	0.500	-0.009	-1.11%
		Prod	0.014	0.008	0.011	0.005	0.006	0.013	0.009	0.007	130.75%
SOUTH	Diyala										
		Area	0.038	0.037	0.035	0.035	0.027	0.023	0.034	-0.004	-13.21%
		Yield	0.731	1.163	1.149	1.143	0.883	0.779	1.014	-0.104	-11.78%
		Prod	0.028	0.043	0.041	0.040	0.023	0.018	0.035	-0.005	-23.43%
	Wasit										
		Area	0.055	0.069	0.063	0.060	0.069	0.060	0.063	-0.009	-13.42%
		Yield	1.045	1.014	1.026	1.083	0.810	0.717	0.996	-0.093	-11.47%
		Prod	0.058	0.070	0.065	0.065	0.056	0.043	0.063	-0.013	-23.35%
	Al Qadisiyah										
		Area	0.078	0.077	0.080	0.080	0.068	0.079	0.077	0.011	15.67%
		Yield	1.359	1.569	1.713	1.688	1.170	1.171	1.500	0.001	0.10%
		Prod	0.106	0.121	0.137	0.135	0.080	0.093	0.116	0.013	15.78%
	Babil										
		Area	0.021	0.020	0.024	0.025	0.024	0.024	0.023	0.000	1.69%
		Yield	0.765	0.909	0.875	0.800	0.839	0.842	0.838	0.003	0.37%
		Prod	0.016	0.018	0.021	0.020	0.020	0.020	0.019	0.000	2.07%
	An Najaf										
		Area	0.002	0.002	0.002	0.002	0.001	0.002	0.002	0.001	66.67%
		Yield	0.778	1.031	1.019	1.000	1.167	1.009	0.999	-0.158	-13.51%
		Prod	0.001	0.002	0.002	0.002	0.001	0.002	0.002	0.001	44.14%
	Baghdad										
		Area	0.005	0.008	0.006	0.005	0.026	0.010	0.010	-0.016	-61.69%
		Yield	1.056	1.090	0.940	1.000	1.192	0.921	1.056	-0.271	-22.71%
		Prod	0.005	0.008	0.006	0.005	0.031	0.009	0.011	-0.022	-70.39%
	Al Anbar										
		Area	0.003	0.002	0.003	0.003	0.003	0.003	0.003	0.000	-6.25%
		Yield	0.798	0.720	0.700	0.667	0.625	0.682	0.702	0.057	9.17%
		Prod	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.000	2.34%
	Karbala										
		Area	0.002	0.002	0.003	0.003	0.002	0.003	0.002	0.001	30.43%
		Yield	0.988	1.001	0.924	0.667	1.174	0.892	0.951	-0.282	-23.99%
		Prod	0.002	0.002	0.002	0.002	0.003	0.003	0.002	0.000	-0.86%
	Maysan										
		Area	0.066	0.071	0.065	0.065	0.076	0.040	0.069	-0.036	-47.58%
		Yield	0.826	1.288	1.249	1.231	0.579	0.588	1.035	0.009	1.52%
		Prod	0.055	0.091	0.081	0.080	0.044	0.024	0.070	-0.021	-46.78%
	Dhi Qar										
		Area	0.064	0.082	0.075	0.075	0.086	0.053	0.076	-0.033	-38.30%
		Yield	1.507	1.104	1.270	1.253	1.217	1.189	1.270	-0.028	-2.26%
		Prod	0.097	0.090	0.095	0.094	0.105	0.063	0.096	-0.041	-39.70%
	Al Muthanna										
		Area	0.038	0.023	0.027	0.025	0.023	0.021	0.027	-0.002	-7.49%
		Yield	0.806	0.784	0.714	0.800	0.564	0.683	0.734	0.119	21.11%
		Prod	0.030	0.018	0.019	0.020	0.013	0.014	0.020	0.002	12.04%
	Al Basrah										
		Area	0.006	0.005	0.006	0.005	0.004	0.005	0.005	0.001	25.00%
		Yield	1.029	0.877	0.891	1.000	1.250	0.913	1.009	-0.338	-27.00%
		Prod	0.006	0.004	0.005	0.005	0.005	0.005	0.005	0.000	-8.75%
	Total										
		Area	1.123	1.495	1.417	1.453	0.499	0.612	1.198	0.113	22.61%
		Yield	0.881	0.689	0.878	0.750	0.863	0.821	0.812	-0.042	-4.85%
		Prod	0.990	1.029	1.245	1.090	0.431	0.502	0.957	0.072	16.66%

APPENDIX







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